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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,426	03/07/2005	Martin Hirsch	22156	1769

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EXAMINER	
YOUNG, NATASHA E	
ART UNIT	PAPER NUMBER
1797	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/088,426	HIRSCH ET AL.	
	Examiner	Art Unit	
	NATASHA YOUNG	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) *4 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/15/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 4-5 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-5 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert et al (US 3,915,692) in view of Kobayashi et al (US 4,039,277).

Regarding claim 1, Herbert et al teaches an apparatus for the thermal treatment of granular solids for performing endothermic reactions, wherein CO_2 and/or water is split off from the solids, comprising a reactor to which fuel, O_2-containing gas and solids are supplied, wherein the fuel is burnt in the reactor to produce combustion gas with temperatures in the range from 600 to 1500°C, the solids in the reactor are brought in fluidizing contact with the combustion gases, solids are withdrawn from the reactor with temperatures in the range from 400 to 1200°C and the O_2-containing gas is preheated by means of a heat-exchanger, characterized in that the reactor constitutes an approximately cylindrical, lying cyclone with an approximately horizontal axis of symmetry and swirling, where in an inlet area of the reactor fuel, solids and gas are introduced into the reactor, and from an outlet area of the reactor disposed opposite the inlet area with a horizontal distance solids and hot exhaust gas are withdrawn (see Abstract; column 2, line 41-54; column 3, lines 33-40; column 4, 53 through column 6, line 9 and line 47 through column 7, line 2).

Herbert et al does not teach preheated solids, hot exhaust gas from the reactor is used for preheating the solids, and the O_2-containing gas is preheated by means of the hot solids.

Kobayashi et al discloses that it is known in the art to preheat finely ground raw materials using the exhaust gas from the reactor (kiln) and the preheaters are cyclones (see column 1, lines 7-55).

The reactions are similar in that granular solids and fuel are reacted.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Herbert et al with the teachings of Kobayashi et al for more efficient heat exchanger due to the cyclone.

It would have been an obvious matter of design choice to use the heated solids to preheat the O_2-containing gas instead of preheating the O_2-containing gas by means of a heat exchanger, since the applicant has not disclosed that the use of the heated solids to preheat the O_2-containing gas solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the use of the heated solids to preheat the O_2-containing gas.

Claim 2 depends on claim 1 such that the reasoning use d to reject claim 1 will be used to reject the dependent portions of the claim.

Regarding claim 2, Herbert et al teaches a preheater (heat exchanger) is disposed before the reactor (see column 4, line 65 through column 5, line 47 and column 7 lines 1-2).

Herbert et al does not teach an apparatus characterized in that at least one preheating cyclone is disposed before the reactor.

Kobayashi et al discloses that it is known in the art to preheat finely ground raw materials and the preheaters are cyclones (see column 1, lines 7-55).

The reactions are similar in that granular solids and fuel are reacted.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Herbert et al with the teachings of Kobayashi et al for more efficient heat exchanger due to the cyclone.

Claim 3 depends on claim 1 or 2 such that the reasoning used to reject claim 1 or 2 will be used to reject the dependent portions of the claim.

Regarding claim 3, Herbert et al does not teach an apparatus characterized in that at least one cooling means is disposed subsequent to the reactor, in which cooling means solids withdrawn from the reactor are cooled in direct contact with O_2-containing gas.

However, Herbert et al discloses an evaporative cooling system and a gas-cooling passage (see column 5, lines 36-46 and column 6, lines 1-18).

It would have been obvious to one having ordinary skill in the art to use the O_2-containing gas to cool the reacted product, since the reaction between the to be treated in the process according to the invention and the high-oxygen gases is endothermic there would be heat transfer from the reacted product to the O_2- containing gas.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATASHA YOUNG whose telephone number is (571)270-3163. The examiner can normally be reached on Mon-Thurs 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NY

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797